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Moss Retards Regeneration in Southeast Alaska

Surface moss, characteristic of the climax forests of Southeast Alaska, presents a real danger to satisfactory regeneration on cutover areas, if left undisturbed by logging. First year records from artificial seeding showed that only a fifth as many seeds germinated in the moss as on mineral soil and these had 28 percent lower survival.

Poor germination in the moss is largely attributed to lack of moisture, although more than 3 inches of rain fell every month during the growing season. Soil moisture is always sufficient for growth on cutover areas in Southeast Alaska at 1 inch below the surface, but surface moss dries out in midsummer to as low as 31 percent moisture content within a few days after a rain. In late July maximum temperatures in the moss ranged from 100° to 117° F. The air space in moss results in higher temperatures which lower the moisture content around the exposed seed or seedling roots.

The moss acts as a mechanical barrier to the seed in reaching a moist seed-bed. Seeds may work down into the more compact layers but if they germinate the seedlings have great difficulty in pushing up through the thick moss.

The following table compares moss and mineral soil with respect to germination and survival.

	Hemlock		Spruce		Cedar		Total	
	Moss	Min. Soil	Moss	Min. Soil	Moss	Min. Soil	Moss	Min. Soil
No. seedlings, thousands	23	98	8	50	10	60	41	208
Survival in percent	49	85	63	93	83	89	60	88